



SUBSTITUTE SPECIFICATION
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ZOYSIAGRASS PLANT NAMED 'Z-89'

LATIN NAME OF GENUS AND SPECIES

The present invention relates to a new *Zoysia* sp. plant.

BACKGROUND OF THE INVENTION

5 The present invention relates to a new and distinct variety of *Zoysia* sp., which is a member of the Graminae family.

The new variety, Z-89, also referred to herein as Z99-89, is the result of five generations of crossing, beginning with a cross of *Z. japonica* x *Z. matrella*, and the reciprocal cross; *Z. tenuifolia* was introduced in the third generation of crosses. The
10 pedigree is shown in FIG. 1. The first cross was field-pollinated. All succeeding generations of crosses were hand-pollinated under greenhouse conditions, and seed was germinated under greenhouse conditions. Seedlings were individually cultured in a greenhouse before being transplanted to the field for evaluation and selection.

Periodic drought conditions in Hawaii have increased the need for improved
15 warm season turfgrass varieties. Zoysiagrasses are well adapted for use under such conditions because of their low water use rates and high heat tolerance.

SUMMARY OF THE INVENTION

The new variety of zoysiagrass, Z-89, exhibits a finer leaf texture, an improved color and an improved growth habit compared to other currently available commercial
20 zoysiagrass varieties. The new variety is vegetatively propagated from sod, plugs, tillers or stolon and rhizome pieces. Asexual propagation in Oahu, Hawaii has established that the combination of characteristics of the new variety are transmitted through succeeding generations. However, seed is genetically unstable.

COMPARISON TO EL TORO AND EMERALD

25 The leaf size is intermediate between its ancestors EL TORO AND EMERALD, giving its appearance a finer texture than EL TORO. It possesses the dark green color

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of EL TORO, and lacks the hummocky growth habit and stiff leaf of emerald. The growth rate is also intermediate between EL TORO and EMERALD.

BRIEF DESCRIPTION OF ILLUSTRATION(S)

FIG. 1 is a diagram showing the pedigree of Z-89.

5 FIG. 2 shows the turf appearance of the new variety.

FIG. 3 shows the appearance of a single leaf of the new variety as compared to that of 'El Toro.'

FIG. 4 depicts the leaf orientation of the new variety and of the 'El Toro' variety.

FIG. 5 shows stolons of the new variety compared with 'El Toro.'

10 DESCRIPTION OF THE NEW VARIETY

The new variety 'Z-89' is characterized by a finer leaf texture, an improved color and an improved growth habit compared to other currently available commercial Zoysiagrass varieties. The following description is of 8 months-old plants grown in Oahu, Hawaii with color descriptions in accordance with the Color Chart of the Royal
15 Horticultural Society, London (4th ed. 1995). All dimensions are in millimeters, weights in grams (unless otherwise stated).

Leaf color:	Near 137A (upper surface); near 139A (underside)
Stolon color:	Near N79B
Leaf length:	From 3.2 cm to 9.9 cm; average length 5.7 cm
20 Leaf width:	From 1.5 mm to 3.0 mm; average width 2.2 mm
Internode length:	From 0.4 cm to 2.9 cm; average length 1.7 cm
Internode thickness:	From 1.2 mm to 2.1 mm; average 1.6 mm
Raceme length:	From 2.7 cm to 9.9 cm; average length 5.0 cm
Culm height	From 7.5 cm to 13.1 cm; average 9.0 cm
25 Pedicel:	From 1.0 mm to 2.1 mm; average 1.5 mm
Ligule	Hairs at ligule area from 2.5 mm to 3.0 mm; hairs on side of ligule 0.5 mm to 4.0 mm

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Spikelet with anthers and

stigma exerted Color from near N77C to near N186C

Mature spikelets Color from near N79A to near 158A

Palea and Lemma:

5 Color is near N144A

Immature seed color is near N79B

Ripe seed color is near 19C

Seeds: About 2.5 to 3 mm in length and .5 to .75 mm in width

Winter color retention and spring green-up are impossible to evaluate in

10 Hawaii's climate.